

MIXED WASTE SUBGROUP FY99 ANNUAL REPORT TO THE STCG
MANAGEMENT COUNCIL

December 9, 1999

During FY99, the Mixed Waste (MW) Subgroup had the following accomplishments, listed below the related STCG Mission Statement elements.

MISSION STATEMENT - Element 1

Function by involving user organizations (both DOE and the contractors), technology providers, regulators, American Indian Tribes, and stakeholders, and promoting broad information exchange among all interested parties. Maintain a helpful attitude and serve as a conscience for technology improvement at Hanford. Contribute to DOE-wide communications and lessons learned.

MW Subgroup Accomplishments

- The subgroup followed the progress of work on TPA milestone M-91 which deals with treatment and disposition of low level MW and TRU/TRUM waste. Many of the S&T needs that were submitted to the MWFA link directly to the M-91 efforts.

MISSION STATEMENT - Element 2

Identify, prioritize using systems analysis, and seek consensus on Hanford Site and program-specific problems, science and technology needs, and requirements. Recognize baseline schedule insertion points for technology. Focus on the baseline, but also identify technologies to support potential baseline alternatives if they offer risk reduction benefits or high financial return on investment by improvements in environmental, safety, or health protection. Devote 20% of the STCG effort to science needs and 80% to technology needs and deployment as a general guideline.

MW Subgroup Accomplishments

- Prepared and endorsed the package of FY2000 MW science and technology needs that were submitted to the Mixed Waste Focus Area (MWFA).
- Prepared and endorsed the Spent Nuclear Fuel technology needs for FY2000.
- Six Technology Insertion Points (TIPs) were reviewed and discussed and all TIPs were input to the FY2000 MYWP. There will be S&T needs statements associated with each TIP.

MISSION STATEMENT - Element 3

Be a forum for assessing and recommending potential technologies for application at Hanford. Look for technologies that provide improved endstates, effectiveness, improved schedules, or improved costs in accomplishing the required results. Also look for technologies to reduce surveillance and maintenance costs while maintaining safe operations. Focus on life-cycle costs and benefits; improvements in environmental, safety, or health protection; and improvements in performance, pollution prevention, and waste minimization relative to alternative remedies. Make appropriate referrals for vendors (e.g., to DOE or the contractors).

MW Subgroup Accomplishments

- The subgroup received a briefing on two PNNL EMSP funded research projects that may aid the Site in handling and disposing of mixed waste. One project was for the design and development of organic sequestering agents and the other is to understand the effects of radiation on glass and ceramics.
- Kevin Salmon of ATG, Inc. presented information to the subgroup about the waste processing capabilities of their Richland facilities focussing on the treatment of mixed waste.
- Information on the 618-4 Burial Grounds Project was presented to the subgroup. Due to the presence of more than 300 barrels of depleted uranium chips in oil work was halted while a treatment plan was developed that included the option of vitrifying the waste in situ.

MISSION STATEMENT - Element 4

Champion and facilitate demonstration and deployment of innovative, modified, or existing technologies that are new to Hanford and share information with other sites to best leverage all available resources.

MW Subgroup Accomplishments

- Funding from the MWFA was used to demonstrate the viability of using a polymeric cement manufactured by Tectonics International of Warm Springs, Oregon. This cement may help meet the technology need for salt stabilization at the Liquid Effluent Facility.
- A demonstration of a laser ablation system for decontaminating metal surfaces was performed and videotaped at General Lasertronics in Milpitas, CA. This may help meet the need for remote decontamination of RH TRU waste. A technology demonstration fact sheet was prepared on this project.
- The subgroup heard about the results of a PNNL study funded by the Efficient

Separations and Processing Crosscutting Program done to demonstrate the efficiency of several ion-exchange membranes in removing ^{90}Sr from Hanford's N-Area well water. The results of this study may impact future operations of the Liquid Effluent Facility if they face removing Sr from liquid waste streams.

- Two proposals were sent to the MWFA from PNNL for further funding. One proposal is for continuing work on SAMMS to remove Hg from waste streams and the second proposal is to continue work on robotics end-effectors.

MISSION STATEMENT - Element 5

Foster technology pull from the DOE-RL and contractor line project customers and eliminate barriers (e.g., "not invented here", resistance to change).

MW Subgroup Accomplishments

- A white paper entitled "Hanford Waste Management Project Needs Related to Robotics and Remote Operations" was reviewed by the subgroup. Representatives from the MWFA and Robotics Crosscutting Program met at Hanford to discuss teaming with us on RH-TRU robotics work. A number of MW S&T needs could potentially be met using robotics.
- Funding was received from the MWFA to begin work on certifying a boxed waste assay system for the WRAP facility. WRAP personnel began determining the requirements needed for a boxed waste assay system for shipments to WIPP. This involved working with WIPP, the MWFA, and DOE-HQ on certification requirements for the assay system.

MISSION STATEMENT - Element 6

Promote competitive privatization and commercialization by communicating information on Hanford's science and technology needs and schedule insertion points, as well as demonstration and deployment opportunities, to commercial technology providers. Help break barriers to involvement by companies new to Hanford.

MW Subgroup Accomplishments

- The Pacific Rim Enterprise Center distributed Hanford technology needs through the World Wide Web, the Northwest Environmental Business Council, and trade shows throughout the world.

MISSION STATEMENT - Element 7

Provide input to decision-makers (e.g., DOE-RL, DOE-ORP, DOE-HQ, Congress, and heads of regulatory agencies) on Hanford's highest-priority science and technology needs to ensure critical needs are funded. Also, provide feedback to them on the Site's accomplishments.

MW Subgroup Accomplishments

- Subgroup members attended and presented information at the MWFA mid-year review in Idaho Falls on February 23-25.
- Subgroup members attended a MWFA sponsored conference on NDA characterization in Salt Lake City in November. PNNL had a poster session on separating TRU from non-TRU waste at the conference.